

## **REMARKS**

Claims 1 - 3 and 5 - 10 are pending in the application. By this amendment Applicants have amended independent Claim 1.

### **Claim Rejection - 35 U.S.C. §103**

Claims 1 - 3 and 5 - 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over McCulloch in view of Kanai for the reasons already of record. The Office Action continues stating:

Furthermore, even in the absence of prior art disclosing the recovery and reuse of the desorbent, it would be obvious to one of ordinary skill in the art to recover and reuse the desorbent because to do so would clearly improve the economic efficiency of the process. With regard to the prior art enabling one of ordinary skill in the art to perform such recovery of the desorbent, it is noted that such procedures are so common and trivial in the art (See Kanai et al., Fig. 1) that mere routine experimentation would reveal the most efficient method to one of ordinary skill in the art.

The reduction of the impurities in the recycled adsorbent to a sufficiently low level would clearly be an obvious expedient. It is axiomatic that the presence of a high amount of impurity in the reused adsorbent would result in inefficiencies.

While Applicants agree that it would be obvious to recover and reuse the desorbent, and in fact have stated as much in previous responses and in the Specification itself, the "recovery" and "reuse" of the desorbent does not encompass reducing impurities found in the desorbent. Rather, it is well known in the art to recover the desorbent and reintroduce it at the beginning of the process. It is further well known in the art that to maintain certain levels of efficiency, it is advisable, and in fact, normal to remove a portion of the recovered desorbent for regeneration prior to reintroduction into the process. Thus, recovered and reused desorbent is distinguishable from regenerated desorbent. In the current state of the art, the efficiency of the desorbent is maintained by continually reintroducing either new desorbent or regenerated desorbent.

Applicants' invention involves postponing the need for regeneration and therefore reducing the cost associated therewith, by removing impurities from recovered desorbent prior to recirculating them into the process for reuse. The removal of impurities delays the need for regenerating the desorbent. This simple act is a marked improvement in the field, and results in advantageous cost savings.

Although the Office Action states that it is axiomatic that removing impurities results in reduced inefficiencies, the test for an obviousness-type rejection under 35 U.S.C. §103, is whether or not those skilled in the art would have been motivated by the prior art to reduce those impurities, as claimed by Applicants. There is simply no reference at all in either McCulloch or Kanai to impurities found in the desorbent. Likewise, there is no mention at all of the inefficiencies created by the presence of such impurities. And finally, there is utterly no teaching or suggestion that one could reduce the presence of such impurities in a manner separate from a full regeneration of the desorbent.

Further, the Official Action states on page 2 that the prior art further discloses recovery and reusing the desorbent after removal of impurities. However, neither McCulloch or Kanai teach or suggest recovering and reusing the desorbent after removal of impurities.

For example, in Kanai, although the desorbent has circulated in the recovery line, it has been noted that the impurities never yield in the desorbent, if an isomeric mixture (feed) is clean. Therefore, Kanai discloses eliminating HCl in the isomeric mixture. The inventors herein surprisingly found that impurities accumulate in the desorbent during the circulation even if the isomeric mixture is clean. This is described in detail from the last paragraph of page 2 to the second paragraph of page 3 in the Applicants' Specification.

As a consequence, it cannot be true that removing impurities is obvious to those of ordinary skill in the field because it was not known and not obvious that impurities themselves are yielded in the circulated adsorbent.

Applicants respectfully submit that their claimed method postpones the need for a full-fledged regeneration of the desorbent, and therefore reduces cost and extends the useful life of the desorbent prior to regeneration.

In summary, removing impurities is not the same as regeneration. Applicants' Specification makes this point abundantly clear on page 12 which indicates that the claimed method prolongs the need for regeneration. Neither McCulloch or Kanai teaches removal of impurities for prolonging regeneration times. Likewise, there is no factual evidence on this record indicating that the removal of impurities prior to recycling or reuse and not as part of regeneration prolongs desorbent life. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance.

Applicants respectfully request early reconsideration and allowance of all pending claims.

Respectfully submitted,



T. Daniel Christenbury  
Reg. No.: 31,750  
Attorney for Applicants

TDC:MAP:gj  
(215) 656-3300